

52



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/609,913	07/03/2000	Jerry L. Mizell	NORT0027	3274
	7590		(11439RRuS02U)	
Dan C Hu Trop Pruner & Hu PC 8554 Katy Freeway Ste 100 Houston, TX 77024			EXAMINER	
			NG, CHRISTINE Y	
			ART UNIT	PAPER NUMBER
			2663	
			DATE MAILED: 06/04/2004	

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/609,913

Applicant(s)

MIZELL ET AL.

Examiner

Christine Ng

Art Unit

2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) 11-14 and 22-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 15-21 and 40-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 11-14 and 22-39 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1, 7, 9, 47 and 49 are objected to because of the following informalities:
 - a) In claim 1 lines 3 and 4, "adapted to" should be reworded. See MPEP 2106.
 - b) In claim 7 lines 3 and 5, "adapted to" should be reworded. See MPEP 2106.
 - c) In claim 9 line 1, "adapted to" should be reworded. See MPEP 2106.
 - d) In claim 47 line 1, "adapted to" should be reworded. See MPEP 2106.
 - e) In claim 49 line 2, "adapted to" should be reworded. See MPEP 2106.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-6, 15-19, 40, 41, 45, 48 and 49 are rejected under 35 U.S.C. 102(e) as being anticipated over U.S. Patent No. 6,512,756 to Mustajarvi et al.

Referring to claim 1, Mustajarvi et al disclose in Figure 1 a system for use in a mobile communications network having a plurality of cell sites (Cell1 and Cell2). The system comprises an interface (Gb) adapted to communicate with a cell site (Cell1) over a network (frame relay network). The system also comprises a controller (SGSN1)

adapted to transmit and receive data through the interface (Gb) over the network (frame relay network) according to a packet-switched protocol. Frame relay is a packet-switched protocol that is used over the Gb interface between SGSN1 and BSC1. BSC "provides packet-switched data transmission between a support node (SGSN) and mobile data terminals" (Column 1, lines 43-45). Refer to Column 1, lines 33-45 and Column 2, lines 25-28.

Referring to claims 2 and 3, Mustajarvi et al disclose in Figure 2 that the packet-switched-protocol (frame relay) comprises a connectionless, packet-based protocol (IP). As shown in Figure 2, the Gb interface between the BSS and SGSN is a frame relay layer. Refer to Column 2, lines 25-28. However, above the frame relay layer is a L3MM layer that can be an Internet Protocol instead of a L3MM protocol. Refer to Column 1, line 65 to Column 2, line 3. Therefore, the frame relay protocol comprises a connectionless, packet-based protocol (IP) above it. Furthermore, the GGSN connects mobile users to data networks 11-12, which can be an IP network, thereby requiring an IP protocol for data transmission. Refer to Column 7, lines 58-61.

Referring to claim 4, Mustajarvi et al disclose in Figure 1 that the interface (Gb) and controller (SGSN1) comprise elements of a General Packet Radio Service system. Figure 1 illustrates a GPRS network architecture. Refer to Column 6, line 47.

Referring to claim 5, Mustajarvi et al disclose in Figure 1 that the network comprises a Gb network (interface between BSC1 and SGSN1). Refer to Column 2, lines 25-28.

Referring to claim 6, Mustajarvi et al disclose in Figure 1 that a serving General Packet Radio Service support node comprises the interface (Gb) and the controller (SGSN1). A serving GPRS support node provides "a packet services for mobile data terminals via several base stations, i.e. cells" (Column 1, lines 41-42) through the Gb interface.

Referring to claim 15, Mustajarvi et al disclose in Figure 1 a method of communicating in a mobile communications system having a cell site (Cell 1), a system controller (SGSN1) and an interface (Gb) between the cell site (Cell1) and the system controller (SGSN1). The method comprises transmitting and receiving data packets over the interface (Gb) according to a packet-switched protocol (frame relay). Frame relay is a packet-switched protocol that is used over the Gb interface between SGSN1 and Cell 1. BSC "provides packet-switched data transmission between a support node (SGSN) and mobile data terminals" (Column 1, lines 43-45). Refer to Column 1, lines 33-45 and Column 2, lines 25-28.

Referring to claim 16, refer to the rejection of claims 2 and 3.

Referring to claim 17, Mustajarvi et al disclose in Figure 1 that transmitting and receiving comprise transmitting and receiving over a Gb interface. SGSN provides "a packet services for mobile data terminals via several base stations, i.e. cells" (Column 1, lines 41-42) through the Gb interface.

Referring to claim 18, Mustajarvi et al disclose in Figure 1 a serving General Packet Radio Service support node for use in a mobile communications system having cell sites (Cell1 and Cell2). The SGSN comprises an interface (Gb) to a network (frame

relay network) coupled to the cell sites (Cell1 and Cell2), the interface (Gb) comprising a packet-switched element (frame relay protocol) to manage communication of packet-switched data packets to the cell sites (Cell1 and Cell2). Frame relay is a packet-switched protocol that is used over the Gb interface between SGSN1 and Cell 1. BSC "provides packet-switched data transmission between a support node (SGSN) and mobile data terminals" (Column 1, lines 43-45). Refer to Column 1, lines 33-45 and Column 2, lines 25-28.

Referring to claim 19, refer to the rejection of claims 2 and 3.

Referring to claim 40, Mustajarvi et al disclose in Figure 2 that the interface (Gb) comprises a network layer (frame relay layer) to manage communications of packets over the network, and a transport layer (BSSGP layer) to manage connections over the network. The frame relay layer establishes "semipermanent connections for which several subscribers' LLC PDUs are multiplexed" (Column 2, lines 26-27) between the SGSN and BSS. The BSSGP protocol "transmits routing information and information related to QOS between a BSS and an SGSN" (Column 2, lines 23-24).

Referring to claim 41, Mustajarvi et al disclose in Figure 2 that the controller (SGSN) comprises a network services layer (LLC relay) to transport packets through the transport (BSSGP) and network (frame relay) layers. The LLC relay "relays LLC protocol data units between a BSS-SGSN interface" (Column 2, lines 19-21).

Referring to claim 45, refer to the rejection of claim 5.

Referring to claim 48, refer to the rejection of claims 2 and 3.

Referring to claim 49, refer to the rejection of claims 2 and 3.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7, 8, 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,512,756 to Mustajarvi et al in view of U.S. Patent No. 6,456,627 to Frodigh et al.

Referring to claim 7, Mustajarvi et al disclose in Figure 1 a node (Cell1) for use in a mobile communications network having a system controller (SGSN1). The node (Cell 1) comprises a base station (BTS1) adapted to communicate with the mobile stations (MS). The node also comprises a module (BSC1) coupled to the base station (BTS1) and adapted to communicate with the system controller (SGSN1) according to a packet-switched protocol. Frame relay is a packet-switched protocol that is used over the Gb interface between SGSN1 and BSC1. BSC "provides packet-switched data transmission between a support node (SGSN) and mobile data terminals" (Column 1, lines 43-45). Refer to Column 1, lines 33-45 and Column 2, lines 25-28.

Mustajarvi et al do not disclose the use of one or more radio transceivers. Instead, Mustajarvi et al disclose a base station (BTS1) instead of radio transceivers.

Frodigh et al disclose that radio transceivers are connected to a base station to communicate with mobile stations. As shown in Figure 6, "the radio transceivers (TRXs) 76 are coupled to the antennas 24 through combiner/duplexers 80 that combine

Art Unit: 2663

downlink transmission signals from the TRXs 76 and distribute the uplink received signals from the mobile station 12" (Column 10, lines 28-32). Furthermore, as shown in Figure 7, the radio transceiver include uplink components to receive signals from mobile stations: down-conversion block 91, sampler block 92, demodulator 96, and channel decoder 97. Refer to Column 10, lines 35-63. The radio transceiver also includes downlink components to send signals to mobile stations: channel coder 102, modulator 104, up-conversion block 106 and power amplifier 108. Refer to Column 10, line 66 to Column 11, line 10. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include one or more radio transceivers on the base station (BTS1); the motivation being to process uplink signals and downlink signals from the mobile stations through an antenna using up/down converters to convert between carrier and baseband frequencies, and modulators/demodulators to encode/decode the data signal.

Referring to claim 8, refer to the rejection of claims 2 and 3.

Referring to claim 46, refer to the rejection of claims 2 and 3.

Referring to claim 47, Mustajarvi et al discloses that the module (BSC1) is adapted to communicate through a Gb interface to the system controller (SGSN1) according to the connectionless, packet-based protocol. Refer to the rejection of claims 2 and 3.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,512,756 to Mustajarvi et al in view of U.S. Patent No. 6,456,627 to Frodigh et al, and in further view of U.S. Patent No. 5,815,495 to Saitoh et al.

Mustajarvi et al and Frodigh et al disclose that the module is adapted to communicate data packets through a frame relay network. Refer to Column 2, lines 25-28. Mustajarvi et al and Frodigh et al do not disclose that each packet contains addresses identifying the node and the system controller.

Saitoh et al disclose in Figure 2 that one type of frame that is transmitted over a frame relay network contains the Data Link Connection Identifier DLCI field, a destination address field D, a source address field S, a control field C and an information field I. Refer to Column 4, lines 11-21. The S field can be used to identify the origin of the message (node) and the D field used to identify the destination of the message (system controller), both of which are used to route the packet through the network on a connection, which is set up prior to data transmission. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that each packet contains addresses identifying the node and the system controller; the motivation being that in connection-oriented systems such as frame relay, a connection must be previously set up prior to data transmission; a source and destination field are necessary to establish that predetermined connection.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,512,756 to Mustajarvi et al in view of U.S. Patent No. 6,456,627 to Frodigh et al in view of U.S. Patent No. 5,815,495 to Saitoh et al, and in further view of U.S. Patent No. 6,584,098 to Dutnall.

Mustajarvi et al, Frodigh et al and Saitoh et al do not disclose that each packet contains Internet Protocol addresses.

Dutnall discloses in Figure 11 a TCP/IP frame that includes IP addresses for the source and destination (Element 110). Refer to Column 1, lines 41-44. In a packet-switched network, destination IP addresses are used to route a packet to its final destination. Data is transmitted "according to the availability of network resources at the time of the transmission of the individual packet" (Column 1, lines 22-23). Also, different parts of the data are routed by different parts of the network "if there is insufficient capacity on any one route for the entire message" (Column 1, lines 28-29). To do this, each data packet must carry an IP address indicating the destination of the packet, "so that at each node in the network, the packet can be routed toward its ultimate destination" (Column 1, lines 31-33). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that each packet contains Internet Protocol addresses; the motivation being that each node of the network needs to know the destination IP address of the packet in order to route it to its final destination.

8. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,512,756 to Mustajarvi et al in view of U.S. Patent No. 6,320,873 to Nevo et al.

Referring to claim 20, Mustajarvi et al do not disclose that the SGSN further comprises a User Datagram Protocol (UDP) transport component to manage connections over the network.

Nevo et al discloses in Figure 2B that a SGSN (Element 52) comprises a TCP/UDP transport component. LLC data packets are received by the SGSN (Element

52) from a mobile station (Element 40) and then are translated by the SGSN (Element 52) into TCP/UDP packets for communication over a packet-switched network to a GGSN (Element 54). "TCP is generally used when a reliable data link, such as X.25, is required between MS 40 and GGSN 54; and UDP is used when such reliability is not required, as in IP transmission" (Column 7, lines 37-40). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include that the SGSN comprises a UDP transport component to manage connections over the network; the motivation being that UDP is a protocol to exchange data packets from a SGSN to a GGSN over a packet-switched network when a reliable data link is not required. UDP does not provide sequencing of data packets arriving at the destination, thereby saving network processing time. Network applications having small messages to transmit can save processing time by using UDP. Refer to Column 7, lines 35-47.

Referring to claim 21, Mustajarvi et al do not disclose that the SGSN further comprises a network services layer to transport data units containing signaling and bearer traffic over the network.

Nevo et al disclose in Figure 2B that the SGSN (Element 52) comprises a network services layer to transport BSSGP packet data units (PDUs) between the BSS and SGSN over a frame relay connection. "The BSSGP layer conveys routing and information related to quality of service (QOS) between the BSS 32 (or BSS 30) and SGSN 52" (Column 7, lines 1-3). Layers shown in Figure 2B are communications protocol layers "required to adapt a signaling and data stream from MS 40 for transport to GPRS 50" (Column 7, lines 61-63). Therefore, it would have been obvious to one

skilled in the art at the time the invention was made to include that the SGSN comprises a network services layer to transport data units over the network; the motivation being that a network services layer transports BSSGP PDUs between the BSS and SGSN, conveying routing and QOS information. Refer to Column 6, line 60 to Column 7, line 6.

9. Claims 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,512,756 to Mustajarvi et al in view of U.S. Patent No. 6,728,268 to Bird.

Referring to claim 42, Mustajarvi et al do not disclose that the network layer comprises an Internet Protocol layer.

Bird discloses that the Internet Protocol "resides on the network layer is used for almost all communication between IP hosts" (Column 2, lines 23-24). IP "determines how to get the datagrams to their destinations and when receiving datagrams, the IP determines how and where they belong" but "does not concern itself with whether the datagrams arrive reliably at their given destination or with the order in which they arrive" (Column 2, lines 22-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the network layer comprises an Internet Protocol layer, the motivation being that IP is the "most widely used network layer protocol in the world" (Column 2, lines 37-38) and allows packets to be transmitted on a connectionless mode; thereby allowing the network to save resources when a source is not continuously sending data to a destination.

Referring to claim 43, Mustajarvi et al do not disclose that the transport layer comprises a User Datagram Protocol layer.

Bird discloses that UDP is contained within the transport layer. Refer to Column 4, lines 42-51. UDP is a communications protocol at the transport layer that provides data flow regulation and is used when reliability is not required. UDP, running on top of the network layer, does not divide a message into packets and reassemble it at the other end nor does it provide sequencing of data packets. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the transport layer comprises a User Datagram Protocol layer; the motivation being that the network layer does not ensure that packets arrive at their destinations so UDP is required to regulate data flow conditions on top of the network layer. Since UDP does not provide segmentation, reassembly nor sequencing of data packet, it saves processing time when applications have little data to send.

Referring to claim 44, Mustajarvi et al disclose that the network services layer (LLC relay) is utilized in a GPRS system. Refer to Column 1, line 65-67 and Column 2, lines 19-21.

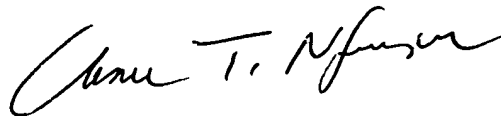
Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (703) 305-8395. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nguyen Chau can be reached on (703) 308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng
May 26, 2004



CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600